



Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

Report Template Version: V05

Report Template Revision Date: 2021-11-03

TEST REPORT

Report No.: CQASZ20250300536E-02
Applicant: Shenzhen guard dragon Electronics Co., LTD
Address of Applicant: Room 302, No. 437, Hengkeng Hedong Village, Guancheng Community, Guanlan Street, Longhua District, Shenzhen
Equipment Under Test (EUT):
Product: Car player
Model No.: B5300, B5303, B500A, B600A, B5306, B5314
Test Model No.: B5300, B5303, B5306, B5314
Brand Name: BQCC
FCC ID: 2A4S3-B5303
Standards: 47 CFR Part 15, Subpart C
KDB558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10:2013
Date of Receipt: 2025-03-14
Date of Test: 2025-03-14 to 2025-04-11
Date of Issue: 2025-04-22
Test Result : **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250300536E-02	Rev.01	Initial report	2025-04-22

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15.203	N/A	PASS
AC Power Line Conducted Emission	47 CFR Part 15.207	ANSI C63.10-2013	N/A
Conducted Peak & Average Output Power	47 CFR Part 15.247	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15.247	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

3 Contents

	Page
1 VERSION	2
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 CLIENT INFORMATION	5
4.2 GENERAL DESCRIPTION OF EUT	5
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	5
4.4 TEST ENVIRONMENT AND MODE	8
4.5 DESCRIPTION OF SUPPORT UNITS	12
4.6 TEST LOCATION	12
4.7 TEST FACILITY	12
4.8 STATEMENT OF THE MEASUREMENT UNCERTAINTY	13
4.9 DEVIATION FROM STANDARDS	13
4.10 ABNORMALITIES FROM STANDARD CONDITIONS	13
4.11 OTHER INFORMATION REQUESTED BY THE CUSTOMER	13
4.12 EQUIPMENT LIST	14
5 TEST RESULTS AND MEASUREMENT DATA	15
5.1 ANTENNA REQUIREMENT	15
5.2 CONDUCTED PEAK & AVERAGE OUTPUT POWER	16
<i>Test Result</i>	<i>17</i>
<i>Note: Duty cycle correction factor details please see section 4.4.</i>	<i>17</i>
<i>When Duty cycle >98%, D.C.F is not required.</i>	<i>17</i>
<i>Test Graphs</i>	<i>18</i>
5.3 99% OCCUPIED BANDWIDTH	22
<i>Test Result</i>	<i>23</i>
<i>Test Graphs</i>	<i>24</i>
5.4 6DB OCCUPIED BANDWIDTH	28
<i>Test Result</i>	<i>29</i>
<i>Test Graphs</i>	<i>30</i>
5.5 POWER SPECTRAL DENSITY	34
<i>Test Result</i>	<i>35</i>
<i>Test Graphs</i>	<i>36</i>
5.6 BAND-EDGE FOR RF CONDUCTED EMISSIONS	40
<i>Test Result</i>	<i>41</i>
5.6.1 <i>Test Graphs</i>	<i>42</i>
5.7 RF CONDUCTED SPURIOUS EMISSIONS	45
<i>Test Result</i>	<i>46</i>
<i>Test Graphs</i>	<i>47</i>
5.8 RADIATED SPURIOUS EMISSIONS	58
5.8.1 <i>Radiated emission below 1GHz</i>	<i>61</i>
5.8.2 <i>Transmitter emission above 1GHz</i>	<i>69</i>
5.9 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY	75
6 PHOTOGRAPHS - EUT TEST SETUP	80
7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	81

4 General Information

4.1 Client Information

Applicant:	Shenzhen guard dragon Electronics Co., LTD
Address of Applicant:	Room 302, No. 437, Hengkeng Hedong Village, Guancheng Community, Guanlan Street, Longhua District, Shenzhen
Manufacturer:	Shenzhen guard dragon Electronics Co., LTD
Address of Manufacturer:	Room 302, No. 437, Hengkeng Hedong Village, Guancheng Community, Guanlan Street, Longhua District, Shenzhen
Factory:	Shenzhen guard dragon Electronics Co., LTD
Address of Factory:	Room 302, No. 437, Hengkeng Hedong Village, Guancheng Community, Guanlan Street, Longhua District, Shenzhen

4.2 General Description of EUT

Product Name:	Car player
Model No.:	B5300, B5303, B500A, B600A, B5306, B5314
Test Model No.:	B5300, B5303, B5306, B5314
Trade Mark:	BQCC
Software Version:	V1.0
Hardware Version:	V1.0
Power Supply:	Power supply DC 5V form Type-c
EUT Supports Radios application:	2.4GHz: Wi-Fi: 802.11b/g/n(HT20): 2412MHz~2462MHz
Simultaneous Transmission	☒ Simultaneous TX is supported and evaluated in this report. ☐ Simultaneous TX is not supported.

4.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps
Product Type:	☒ Mobile ☐ Portable
Test Software of EUT:	Pandora_R22.20.1701
Antenna Type:	PCB antenna
Antenna Gain:	3.29dBi
Note:	

Model No.: B5300, B5303, B500A, B600A, B5306, B5314

Only the model B5300, B5303, B5306, B5314 was tested, their electrical circuit design, layout, components used and internal wiring are identical, only the color of the product is different, so the model name is also different.

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

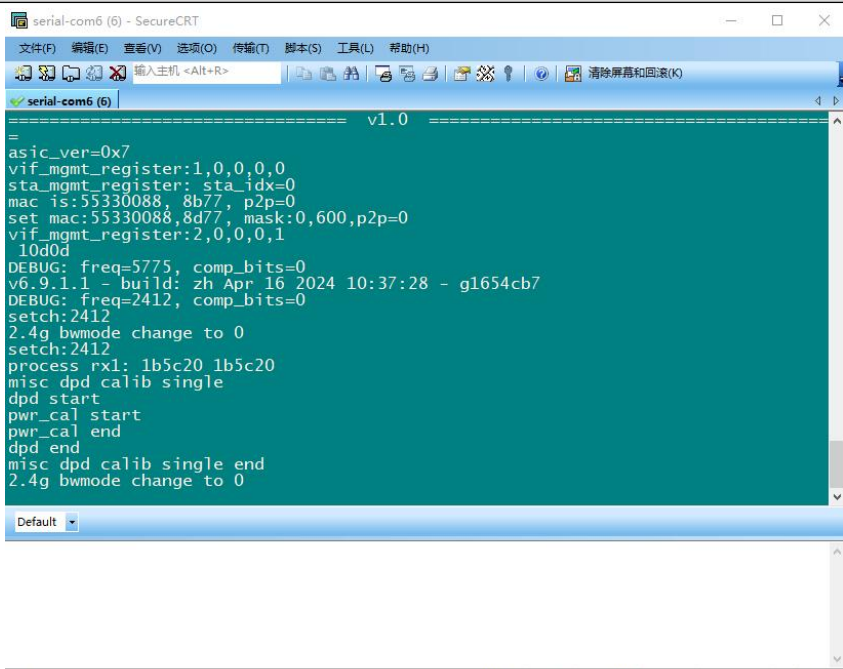
For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.4 Test Environment and Mode

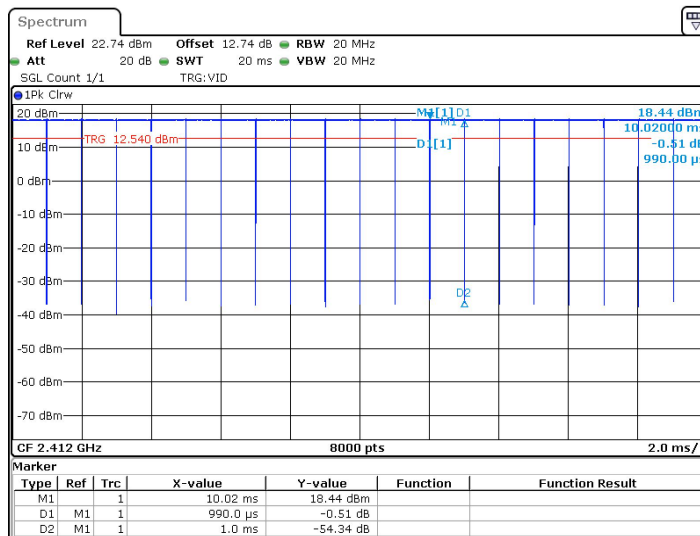
Operating Environment:	
Radiated Emissions:	
Temperature:	25.3 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.6 °C
Humidity:	60 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item test (RF Conducted test room):	
Temperature:	25.5 °C
Humidity:	52 % RH
Atmospheric Pressure:	1009 mbar
Test mode:	
Transmitting mode:	EUT is set in RF test mode in all supported modulation types, bandwidth and data rate, etc.
EUT Power level:	Class13
Run Software:	
	

Operated Mode for Worst Duty Cycle:		
Test Mode	Duty Cycle(%)	Average correction factor(dB)
IEEE802.11b	99.00	/
IEEE802.11g	98.57	/
IEEE802.11n (HT20)	98.51	/

Remark:

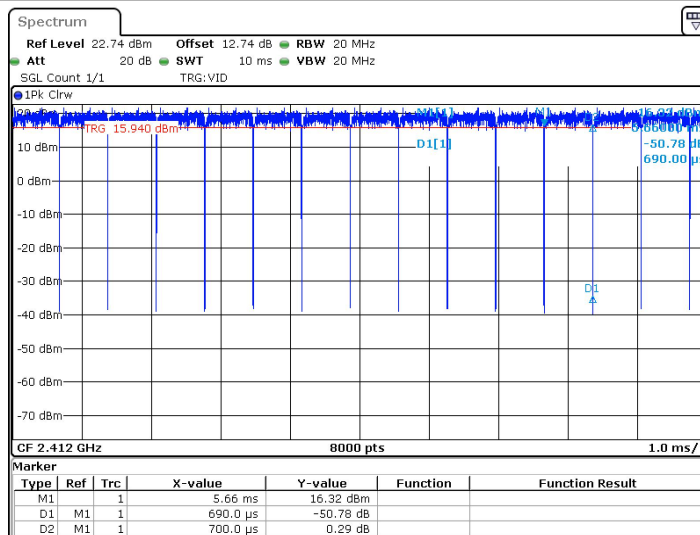
- 1) Duty cycle= On Time/ Period;
- 2) Duty Cycle factor = $10 * \log(1/ \text{Duty cycle})$;

Test Graph_IEEE802.11b Duty Cycle:



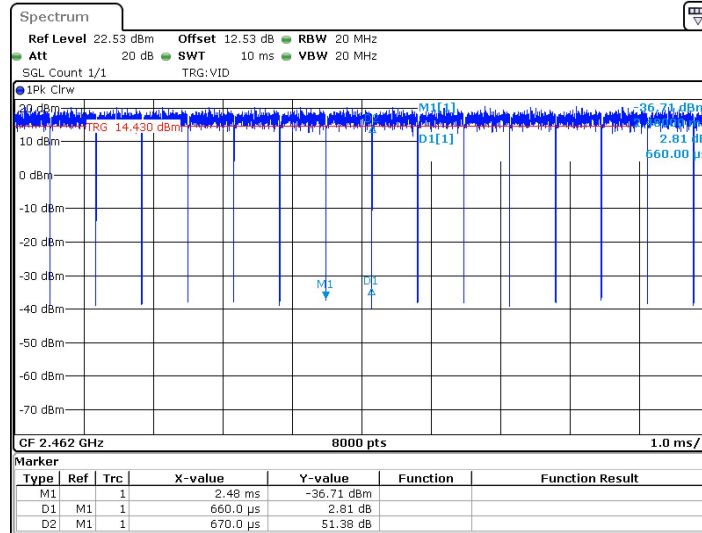
Date: 3 APR 2025 14:58:33

Test Graph_IEEE802.11g Duty Cycle:



Date: 3 APR 2025 15:05:01

Test Graph_ IEEE802.11 n (HT20) Duty Cycle:



Date: 3.APR.2025 15:12:40

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.8 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8℃	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	Frequency Error	5.5 Hz	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

4.9 Deviation from Standards

None.

4.10 Abnormalities from Standard Conditions

None.

4.11 Other Information Requested by the Customer

None.

4.12 Equipment List

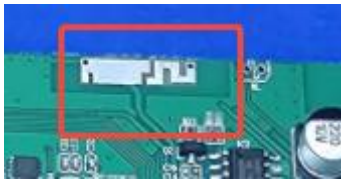
Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU26	CQA-038	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU40	CQA-075	2024/9/2	2025/9/1
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2024/9/2	2025/9/1
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2024/9/2	2025/9/1
Preamplifier	EMCI	EMC184055SE	CQA-089	2024/9/2	2025/9/1
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2024/9/2	2025/9/1
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2024/9/2	2025/9/1
Antenna Connector	CQA	RFC-01	CQA-080	2024/9/2	2025/9/1
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2024/9/2	2025/9/1
Power meter	R&S	NRVD	CQA-029	2024/9/2	2025/9/1
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2024/9/2	2025/9/1
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
LISN	R&S	ENV216	CQA-003	2024/9/2	2025/9/1
Coaxial cable	CQA	N/A	CQA-C009	2024/9/2	2025/9/1
DC power	KEYSIGHT	E3631A	CQA-028	2024/9/2	2025/9/1

Test software:

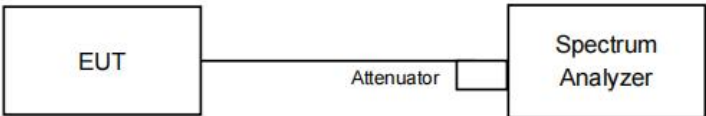
	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
EUT Antenna:	
The antenna is PCB antenna. The connection/connection type between the antenna to the EUT's antenna port is: permanently attachment . This is either permanently attachment or a unique coupling that satisfies the requirement.	

5.2 Conducted Peak & Average Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10: 2013
Test Setup:	<i>Setup for Power meter measurement method</i>  <i>Setup for Spectrum analyser measurement method</i> 
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

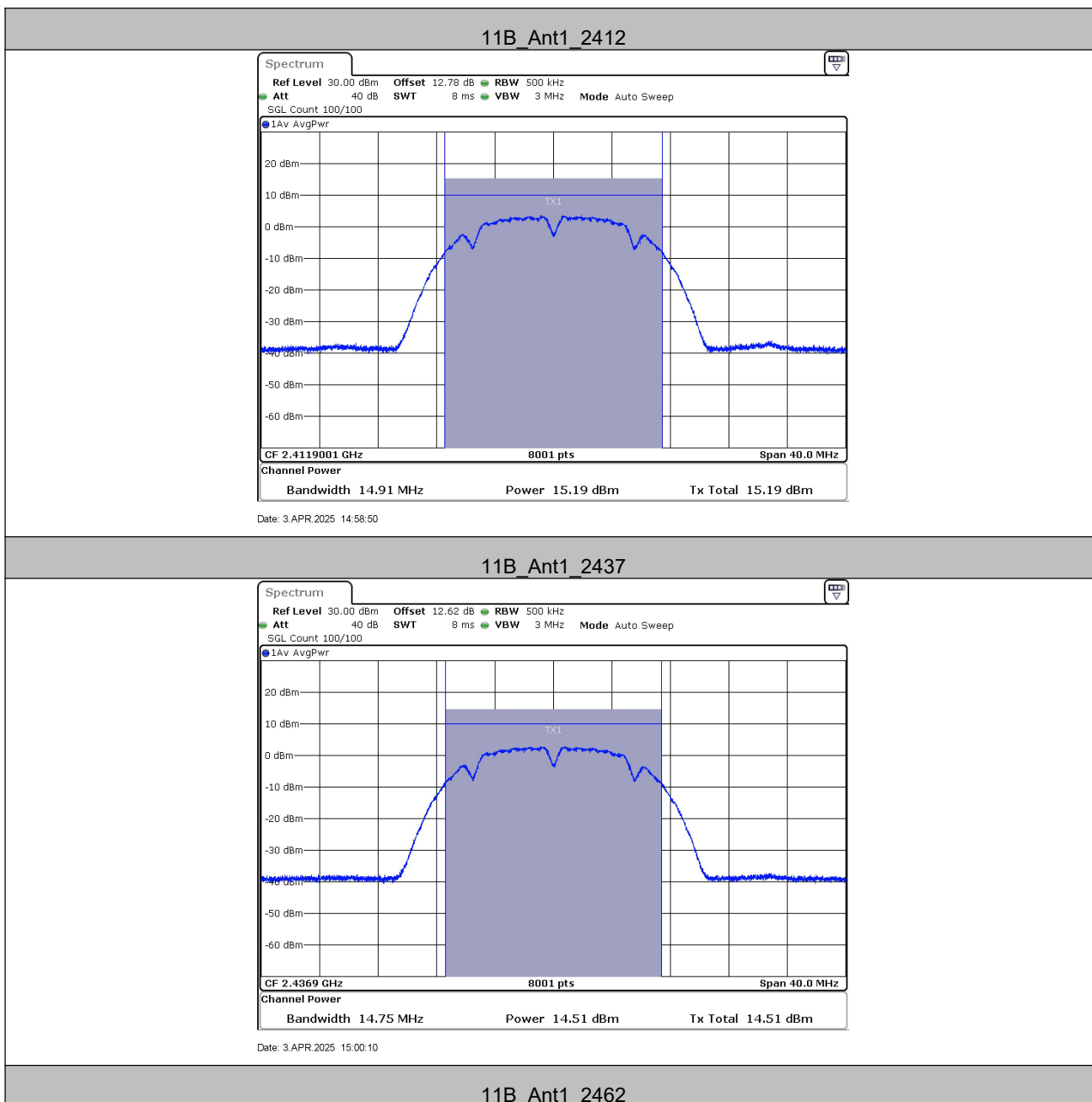
Test Result

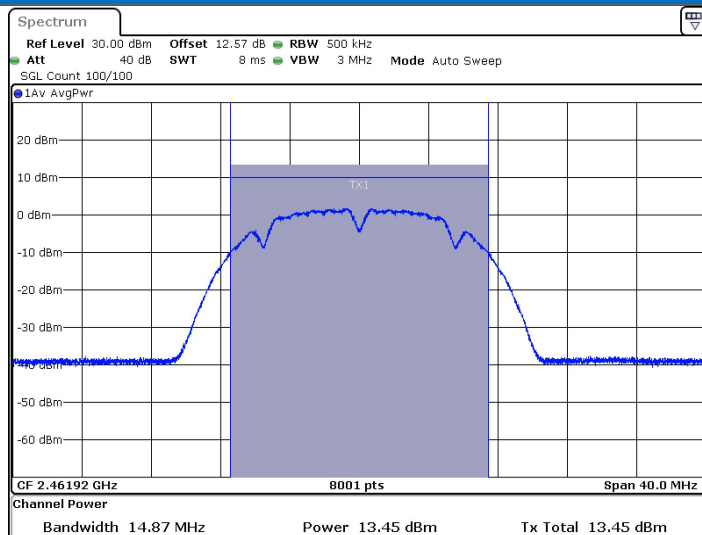
Test Mode	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	15.19	≤30.00	PASS
	2437	14.51	≤30.00	PASS
	2462	13.45	≤30.00	PASS
11G	2412	13.14	≤30.00	PASS
	2437	12.39	≤30.00	PASS
	2462	11.37	≤30.00	PASS
11N20SISO	2412	12.94	≤30.00	PASS
	2437	12.15	≤30.00	PASS
	2462	11.14	≤30.00	PASS

Note: Duty cycle correction factor details please see section 4.4.

When Duty cycle >98%, D.C.F is not required.

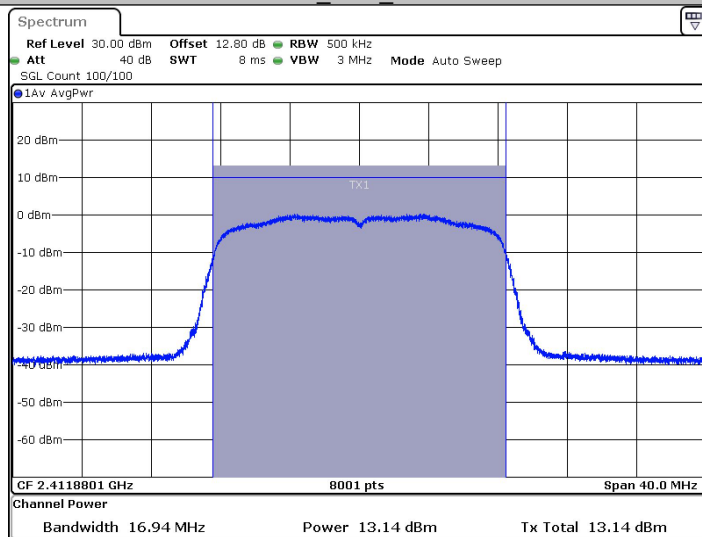
Test Graphs





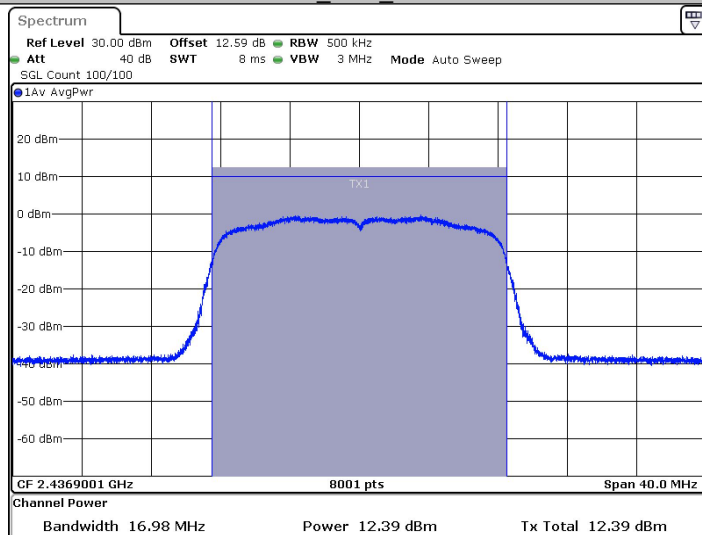
Date: 3.APR.2025 15:01:32

11G_Ant1_2412



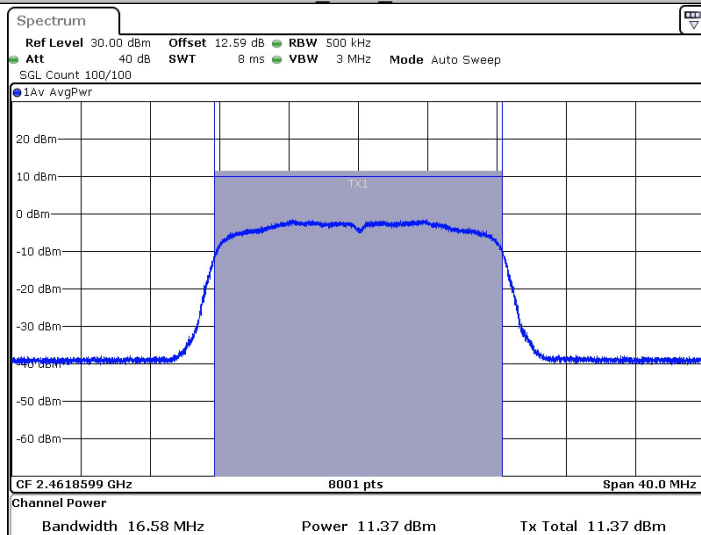
Date: 3.APR.2025 15:05:17

11G_Ant1_2437



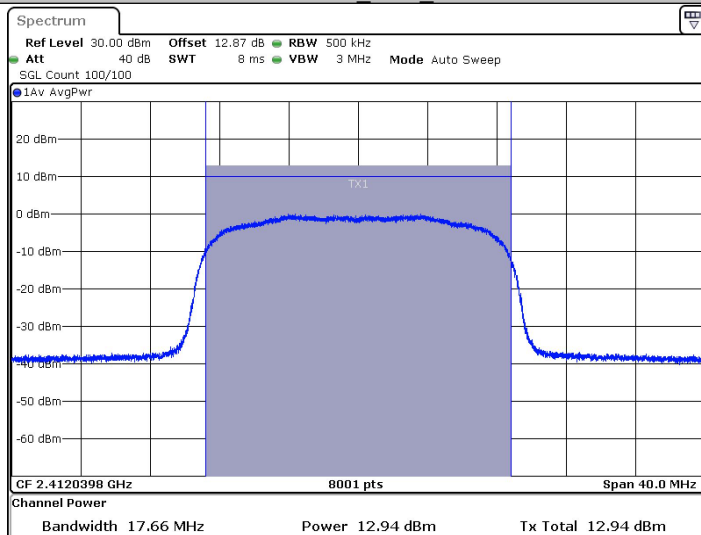
Date: 3.APR.2025 15:06:32

11G_Ant1_2462



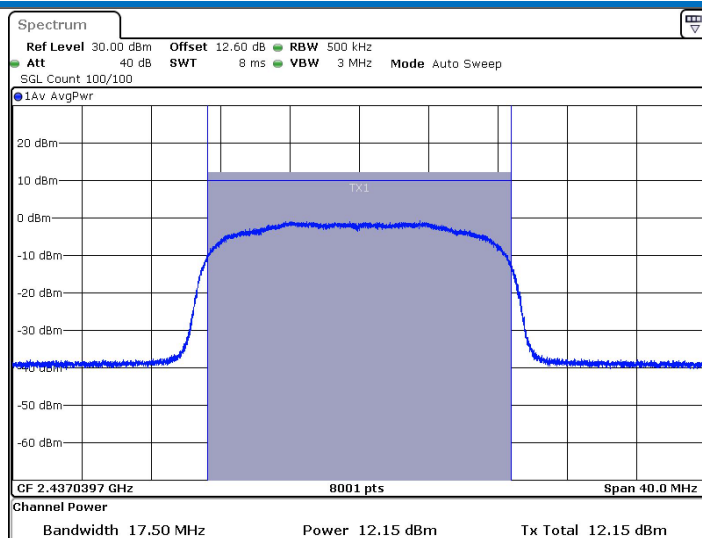
Date: 3.APR.2025 15:07:36

11N20SISO_Ant1_2412



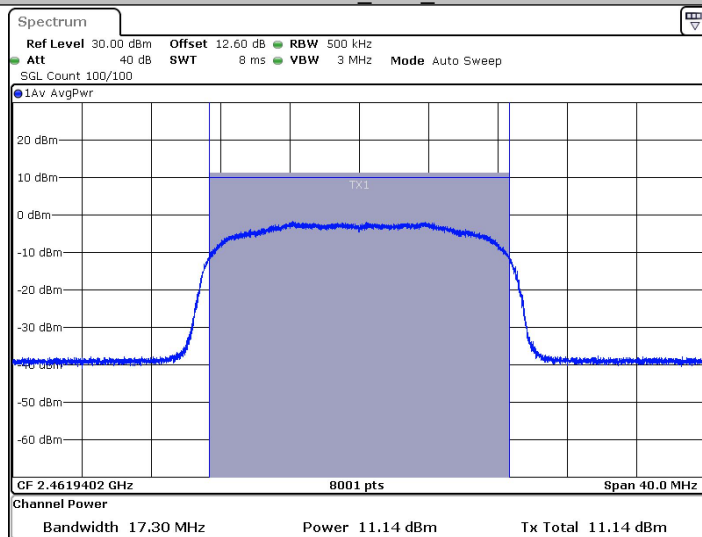
Date: 3.APR.2025 15:08:51

11N20SISO_Ant1_2437



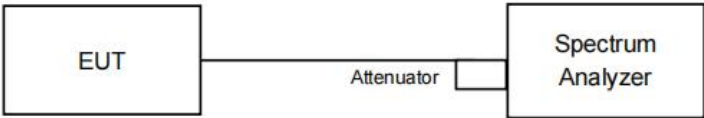
Date: 3.APR.2025 15:11:44

11N20SISO_Ant1_2462



Date: 3.APR.2025 15:12:56

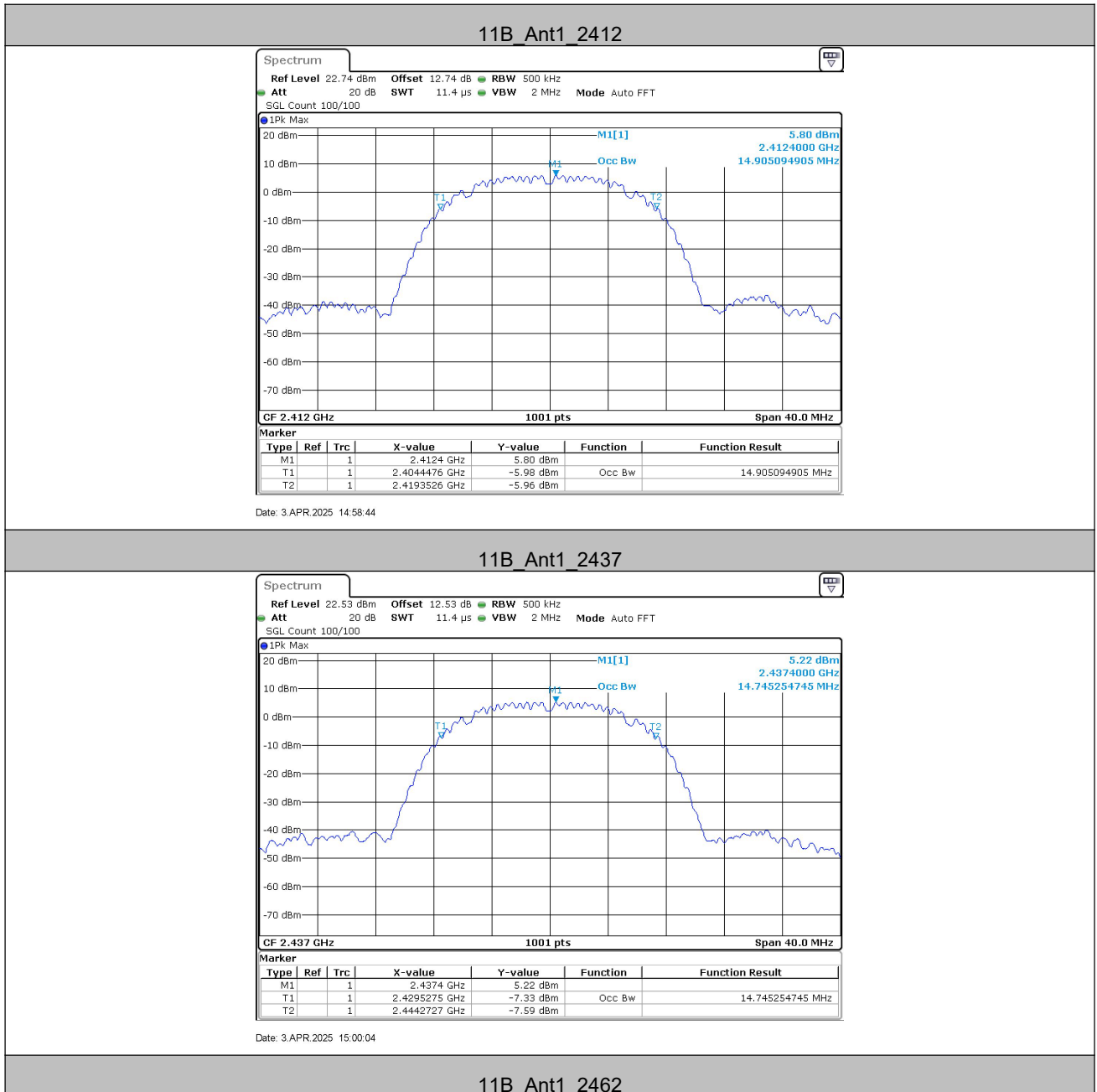
5.3 99% Occupied Bandwidth

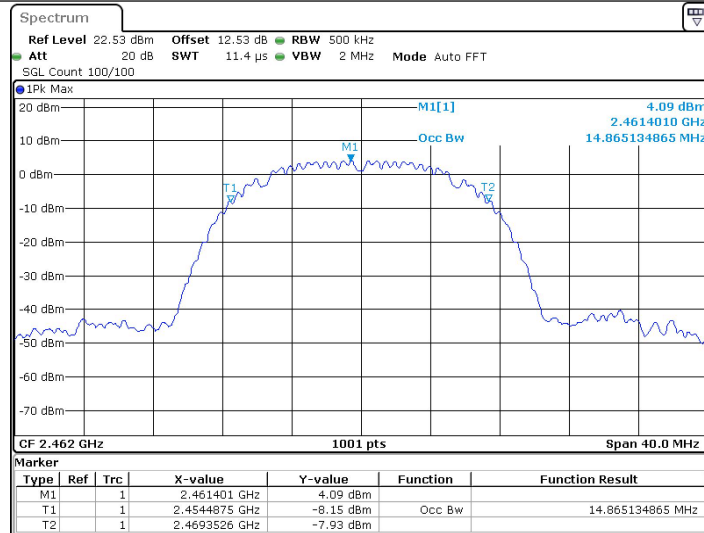
Test Requirement:	47 CFR Part 15C
Test Method:	ANSI C63.10: 2013
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Test Result

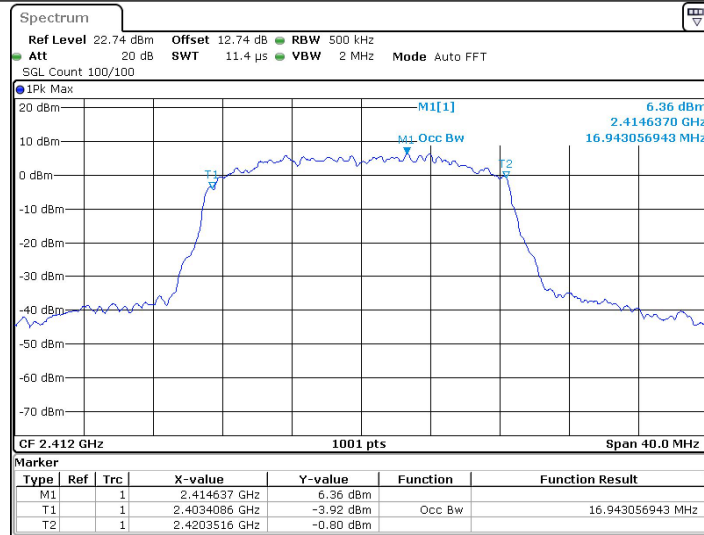
TestMode	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	2412	14.905	2404.4476	2419.3526
	2437	14.745	2429.5275	2444.2727
	2462	14.865	2454.4875	2469.3526
11G	2412	16.943	2403.4086	2420.3516
	2437	16.983	2428.4086	2445.3916
	2462	16.583	2453.5684	2470.1518
11N20SISO	2412	17.662	2403.2088	2420.8711
	2437	17.502	2428.2887	2445.7912
	2462	17.303	2453.2887	2470.5914

Test Graphs

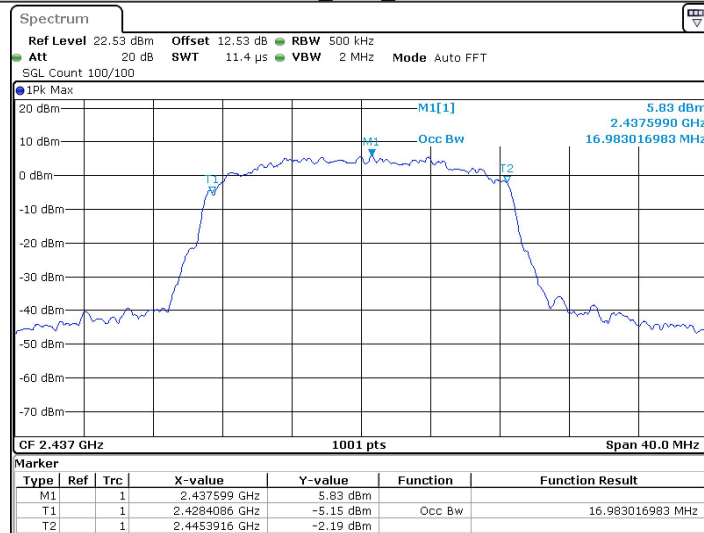




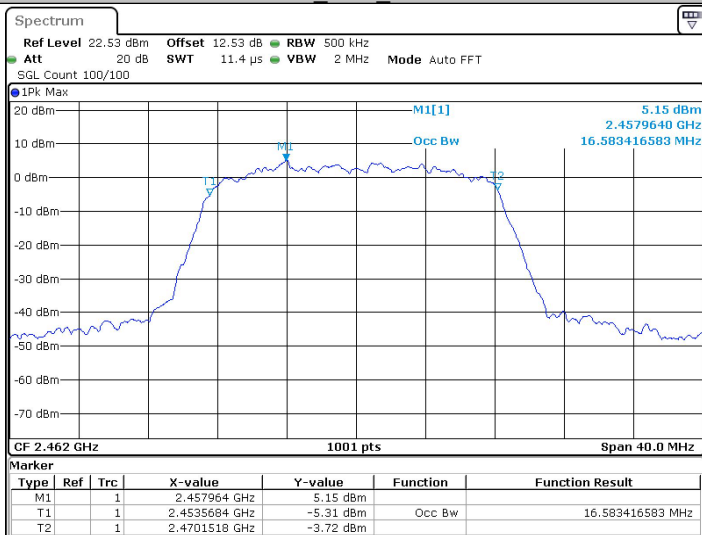
11G_Ant1_2412



11G_Ant1_2437

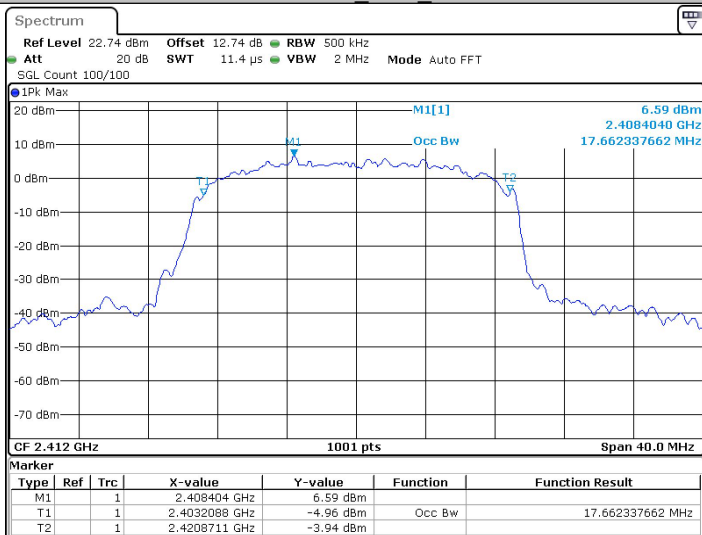


11G_Ant1_2462



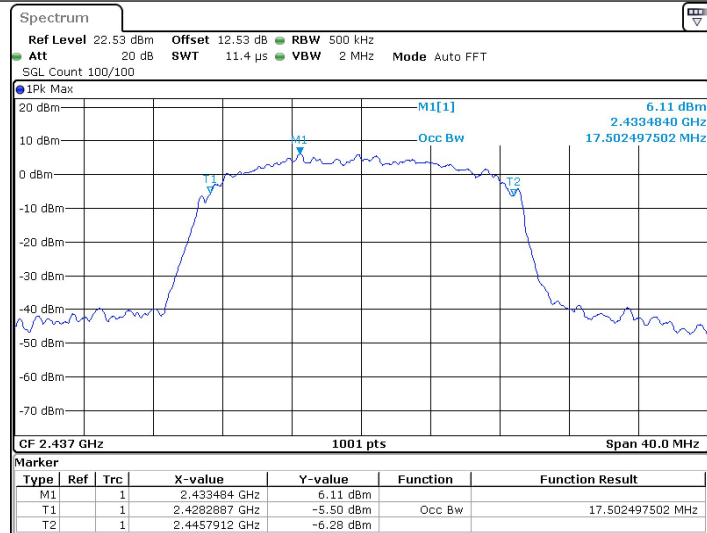
Date: 3.APR.2025 15:07:31

11N20SISO_Ant1_2412



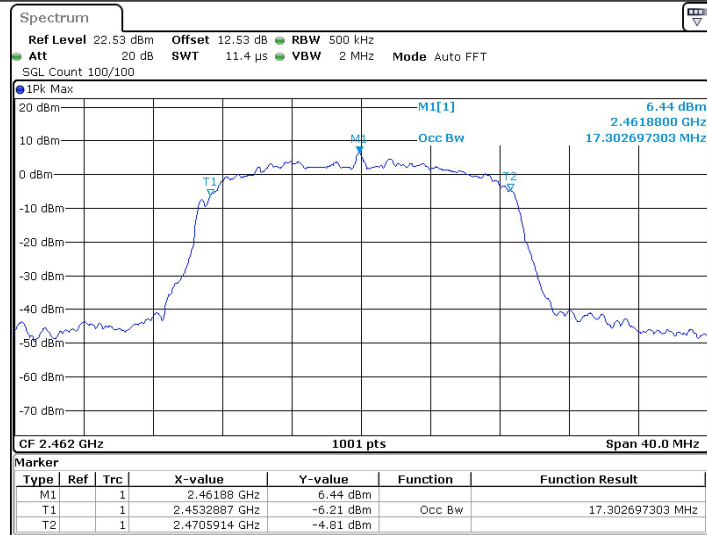
Date: 3.APR.2025 15:08:46

11N20SISO_Ant1_2437



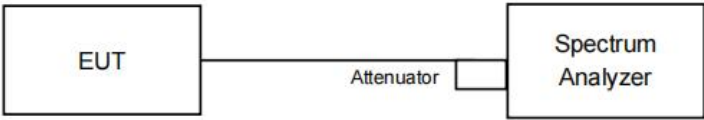
Date: 3.APR.2025 15:11:39

11N20SISO_Ant1_2462



Date: 3.APR.2025 15:12:51

5.4 6dB Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10: 2013
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	≥ 500 kHz
Test Results:	Pass

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.12	0.5	PASS
		2437	12.04	0.5	PASS
		2462	11.12	0.5	PASS
11G	Ant1	2412	13.88	0.5	PASS
		2437	15.12	0.5	PASS
		2462	12.64	0.5	PASS
11N20SISO	Ant1	2412	12.64	0.5	PASS
		2437	13.16	0.5	PASS
		2462	13.88	0.5	PASS

Test Graphs

